

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) Method for producing steel products (1) with optimum surface quality, ~~such as automobile skin sheet or sheet for welded pipes, especially with ultralow carbon contents (ULC or IF steel), nitrogen contents, total oxygen contents, high-strength and/or stainless steel grades, comprising the steps of: in each case by melting (2) the steel on the basis of an electric arc furnace (2b) and treating the steel treatment in a ladle metallurgy installation (3); subsequently, after which the steel is continuously casting the steel cast (4) into a thin slab (5a) in a the continuous casting mold (14), descaled, partially deforming, cutting the slab deformed, cut into partial strand lengths (15), generally descaling descaled (28), heating heated to rolling temperature and homogenizing homogenized in a soaking furnace (16),~~

generally descaling ~~desealed~~ again and rolling ~~rolled~~ in a finishing mill (6a), coiling ~~coiled~~ in a first coiling station (20) immediately downstream of a ~~the~~ last finishing stand (19) or, alternatively, downstream of a cooling line (21), and adjusting ~~a~~ ~~the~~ final microstructure (9) ~~is adjusted~~ in a cooling line (21) according to the desired grade of steel by cooling on a runout table (22), and generally finish-coiling the rolled product (1a) ~~is generally finish-coiled~~ in a second coiling station (23); and further including the step of selecting, ~~wherein the molten steel (1b) is produced in a process route (10, 100; 12; 13) for producing the molten steel that is selected according to a~~ ~~the~~ desired final microstructure (9) ~~from the following:~~

- (a) by producing the molten steel (1b) in a melting installation (2a), which is not a steelworks converter, by a vacuum degassing system (27), and in a ladle furnace (25), or
- (b) by melting in an electric arc furnace (2b) or in a two vessel electric arc CONARC double furnace, and in the a ladle furnace (25) with an electrode system (31), and in a vacuum degassing system, or

- (c) by melting in an electric arc furnace installation (35) or the two vessel electric arc a ~~CONARC double~~ furnace (30) capable of a two stag process or an individual furnace vessel (30), and in the a ladle furnace (25), and in a differential-pressure vacuum degassing system (43), or
- (d) by melting in the an electric arc furnace (2b) with additions of alloying materials (26), a partial-quantity degassing in the ladle furnace (25), or a vacuum degassing system (27) and a ladle degassing (27).

2. (Currently amended) Method in accordance with claim 1, wherein successive treatment steps (24) are carried out as a first process route (10)

in the an electric arc furnace (2b) and
in a ladle metallurgy installation (3)
with at least one vacuum degassing system (27)
followed by the a ladle furnace (25) for decarbonization, reduction, and addition of alloying materials (26), and
with the a ladle furnace (25) for slag formation, for slag work, for temperature control, for final adjustment of a

the final analysis, and for purity rinsing to a desired Δ <Al>
content contents.

3. (Currently amended) Method in accordance with claim 1,
wherein successive treatment steps (24) are carried out as a the
second process route (11)

in the an electric arc furnace (2b) or the an electric arc
furnace installation (35) and

in a ladle metallurgy installation (3),

with the a ladle furnace (25) for slag formation

for the heating

and for the prereduction (FeMnH₂) of the steel,

with a vacuum degassing system (27)

for the decarbonization and denitrogenation

for the reduction of the slag on the steel

surface

for the desulfurization under reduced pressure,

for a the final adjustment of the final analysis

and

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for the purity rinsing to a desired Δ <Al> under atmospheric pressure.

4. (Currently amended) Method in accordance with claim 1, wherein successive treatment steps (24) are carried out as a the third process route (12)

in the an electric arc furnace (2b) or in the an electric arc furnace installation (35) and

in a ladle metallurgy installation (3)

with the a ladle furnace (25)

for temperature control and

for prereduction ($FeMnHC$)

with at least one differential-pressure degassing process (43) for the decarbonization, desulfurization and denitrogenation, reduction, and addition of alloying materials from an iron alloy, and with a final adjustment of the final analysis and

for the purity rinsing to <Al> contents <15 ppm bound aluminum (Al_2O_3).

5. (Currently amended) Method in accordance with claim 1,
wherein successive treatment steps (24) are carried out as a ~~the~~
fourth process route (13)

 in an electric arc furnace (2b) or in an electric arc
furnace installation (35) and

 in a ladle metallurgy installation (3) with a ladle furnace
(25) for temperature control and a subsequent partial-quantity
degassing (27a) for decarbonization and denitrogenation,
desulfurization, with a ladle degassing (27) for a ~~the~~ final
adjustment of the final analysis and for purity rinsing to
desired Δ <Al> contents.

6. (Previously presented) Method in accordance with claim
1, wherein a descaling (28) is carried out directly below the
continuous casting mold (14).

7. (Previously presented) Method in accordance with claim
1, wherein a controlled high-temperature oxidation (29) by a
controlled atmosphere is carried out in the soaking furnace
(16).

8. (Previously presented) Method in accordance with claim 1, wherein the partial strand lengths (15) are inductively heated downstream of the soaking furnace (16).

9. (Currently amended) Method in accordance with claim 1, wherein the partial strand lengths (15) are subjected to controlled cooling upstream of a ~~the~~ first finishing stand (17) of the finishing mill (6a).

10. (Previously presented) Method in accordance with claim 1, wherein continuous product (1c) coiled in the second coiling station (23) is subjected to controlled cooling.

11. (Previously presented) Method in accordance with claim 1, wherein the electric arc furnace installation (35) comprises two furnace vessels (30), which are alternately operated with a swiveled electrode system (31) and an oppositely swiveled top injection lance (32), are operated with pig iron, direct reduced

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charge materials, and scrap, and are operated partially with electric power and/or chemical energy.

12. (Currently amended) Method in accordance with claim 1, wherein steels with multiphase microstructure ~~(dual-phase steel 33 or TRIP steel 34)~~ are produced.

Claims 13-19 (Canceled)